UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,585	10/31/2002	Lung-Sheng Lee	FTCP0013USA	9765

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EXAMINER
TAVERAS, SINITHRO M

ART UNIT	PAPER NUMBER
2632	

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		10/065,585	LEE ET AL.
		Examiner	Art Unit	
		S. Miguel Taveras	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 December 2002</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 December 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

2. In Paragraph 5, "Apple"s" should be changed to "Apple's".

3. In Paragraph 5, "know" should be changed to "known".

    Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7, 8, 10,11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated

by US Patent 6,275,696 B1 to Paik.

6. Regarding claim 1, Paik discloses a radio device capable of anticipating a link state (by

counting errors in frames received) as being a standby link state or a connection link state, the

radio device operating under a frequency hopping scheme wherein the radio device changes

frequencies (between 64Khz and 56Khz) according to the link state and according to a periodic

timer that defines regular time slots (Col. 5 lines 31-39, Col. 7 lines 36-47), the radio device

comprising: a first register set for storing standby frequency channel parameters relating to the

standby link state (power-off state); a second register set for storing connection frequency

channel parameters relating to the connection link state (power-on state) (Col. 12 lines 12-24); a

multiplexer connected to outputs of the first and second register sets for selecting and outputting

either the standby or connection frequency channel parameters (Col. 3 lines 55-67, Col. 4 lines

66-67 and Col. 5 lines 1-20); a link state controller connected to a selection input of the

multiplexer for controlling the multiplexer according to the link state of the radio device (Col. 3

lines 55-67, Col. 4 lines 66-67 and Col. 5 lines 1-20); a working register set connected to the

output of the multiplexer for receiving the selected frequency channel parameters output by the

multiplexer (Col. 9 lines 60-67, Col. 10 lines 1-4, Fig. 9A and Fig. 9B; the status register holds

the parameters of the current transmission); and a frequency channel controller connected to the

working register set for controlling the radio device according to the selected frequency channel

parameters; wherein before the radio device changes frequencies from a current time slot to a

next time slot the standby frequency channel parameters for the next time slot and the connection

frequency channel parameters for the next time slot are stored in the first and second register sets

respectively, such that the link state controller is capable of switching the multiplexer according

to the link state of the radio device for the next time slot so that the selected frequency

parameters are loaded into the working register set (Col. 5 lines 11-20 and 31-39).

7.   Regarding claim 2, Paik discloses the radio device of claim 1 wherein the standby and

connection frequency channel parameters are determined by a software interrupt service routine

(ISR) for the next time slot during the current time slot (Col. 2 lines 63-67, Col. 3 lines 1-3, Col.

13 lines 60-67, Col. 14 lines 1-11, Fig. 3).

8.   Regarding claim 3, Paik discloses the radio device of claim 1 wherein the selected

frequency channel parameters are loaded into the working register set ahead of the next time slot

as indicated by the periodic timer (Col. 4 lines 66-67, Col. 5 lines 1-20, Col. 11 lines 19-39).

9.   Regarding claim 4, Paik discloses the radio device of claim 1 further comprising an RF

device connected to the frequency channel controller for transmitting and receiving radio signals

according to the selected frequency channel parameters (Abstract and Col. 1 lines 17-21).

10.   Regarding claim 7, Paik discloses the radio device of claim 1 wherein each link state has

a different set of frequencies that are cycled through according to the frequency hopping scheme

(Col. 5 lines 31-39 and Col. 11 lines 30-39).

11.   Regarding claim 8, Paik discloses the radio device of claim 1 wherein the link state is

determined by information received from a second radio device (Col. 7 lines 40-47; errors

received determine the state of the link).

12.   Regarding claim 10, Paik discloses the radio device of claim 1 further comprising

additional link states and an additional register set for each additional link state, wherein the

multiplexer is further connected to outputs of the additional register sets for further selecting and

outputting frequency channel parameters of the additional register sets (Col. 7 lines 47-56; states

there can be up to 4 registers instead of just two).

13.   Regarding claim 11, Paik discloses a method for setting a link state for a radio device, the

radio device comprising a first register set (power-off state), a second register set (power-on

state), and a frequency channel controller, the radio device operating under a frequency hopping

scheme wherein the radio device changes frequencies according to the link state and according to

a periodic timer that defines regular time slots (Col. 5 lines 31-39, Col. 7 lines 36-47), the

method comprising: storing standby frequency channel parameters for a next time slot in the first

register set; storing connection frequency channel parameters for the next time slot in the second

register set (Col. 12 lines 12-24); selecting the standby frequency channel parameters during a

current time slot when the link state of the radio device is to be a standby link state during the

next time slot (Col. 3 lines 55-67, Col. 4 lines 66-67 and Col. 5 lines 1-20); selecting the

connection frequency channel parameters during the current time slot when the link state of the

radio device is to be a connection link state during the next time slot; and inputting the selected

frequency channel parameters into the frequency channel controller prior to the beginning of the

next time slot for controlling the radio device during the next time slot (Col. 3 lines 55-67, Col. 4

lines 66-67 and Col. 5 lines 1-20).

14.   Regarding claim 13, Paik discloses the method of claim 11 further comprising calculating

standby frequency channel parameters and connection frequency channel parameters using a

software interrupt service routine (ISR) and forwarding the calculated frequency channel

parameters to the first and second register sets (Col. 2 lines 63-67, Col. 3 lines 1-3, Col. 13 lines

60-67, Col. 14 lines 1-11, Fig. 3).

Claim Rejections - 35 USC § 103

15.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

16.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent

6,275,696 B1 to Paik in view of US Patent 5,621,720 to Bronte et al (hereinafter Bronte).

Regarding claim 5, Paik discloses all the limitations from claim 4 as applied above from

which claim 5 depends.

Paik doesn't expressly disclose that the link state controller switches the multiplexer ahead of the next time slot by a predetermined RF settling time of the RF device.

Bronte teaches a radio device wherein switching occurs ahead of the next time slot by a predetermined RF settling time of the RF device (Col. 54 lines 49-57 and Col. 55 lines 5-15; in this case he chooses a settling time greater than the round trip delay).

Paik and Bronte are analogous art because they are from a similar problem solving area, transmitting data across a connection link.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to accommodate the settling time of a connection link.

The suggestion/motivation for accommodating the settling time of a connection link would be so that processing functions could take into account worst case travel time of data and then plan subsequent data functions accordingly (Col. 55 lines 5-15).

17.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,275,696 B1 to Paik in view of US Patent 6,366,622 to Brown et al (hereinafter Brown).

Regarding claim 6, Paik discloses all the limitations from claim 4 as applied above from which claim 6 depends.

Paik doesn't disclose that the radio device is designed and manufactured according to the Bluetooth specifications.

Brown teaches that a radio device using frequency hopping and links to transmit data can be designed and manufactured according to the Specification of the Bluetooth System for wireless communications (Col. 3 lines 26-67).

Paik and Brown are analogous art because they are from a similar problem solving area, transmitting data across a connection link.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Bluetooth capabilities as taught by Brown in a radio system of Paik.

The suggestion/ motivation for including Bluetooth in a radio system using frequency hoping is so that many of the proprietary cables that connect one device to another can be replaced with one universal short-range radio link (Brown Col. 3 lines 35-38).

18.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,275,696 B1 to Paik in view of US Patent 6,094,575 to Anderson et al (hereinafter Anderson).

Regarding claim 9, Paik discloses all the limitations from claim 1 as applied above from which claim 9 depends.

Paik doesn't disclose that the that when in the standby link state the periodic timer is generated by the radio device, and when in the connection link state the periodic timer is generated by and received from a second radio device.

Anderson teaches that a radio device wherein the periodic timer is generated by the radio device (mobile station), and where a second timer is generated by and received from a second radio device (base station) (Col. 154 lines 29-37 and 52-61).

Paik and Anderson are analogous art because they are from a similar problem solving area, transmitting data across a connection link.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a radio device that could receive and generate periodic timer events while in different states as taught by Anderson, to the communication system of Paik.

The suggestion/motivation for including periodic timer events from a radio system and a base station would be so that alerts could be received concerning a lost or "leaky" link (Col. 154 lines 29-37 and 52-61).

19.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,275,696 B1 to Paik in view of US Patent 5,671,357 to Humblet et al (hereinafter Humblet).

Regarding claim 12, Paik discloses all the limitations from claim 11 as applied above from which claim 12 depends.

Paik doesn't expressly disclose that the storing, selecting, and inputting steps are synchronized through the periodic timer.

Humblet teaches a radio device in which the storing, selecting, and inputting steps are synchronized through the periodic timer (Col. 2 lines 66-67 and Col. 3 lines 1-9).

Paik and Humblet are analogous art because they are from a similar problem solving area, transmitting data across a connection link.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide synchronization of storing, selecting and inputting steps, as taught by Humblet, to the communication system of Paik.

The suggestion/motivation for providing synchronization of storing, selecting and inputting steps would be so that the invention would maximize performance of the system (Col. 3 lines 1-9).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Miguel Taveras whose telephone number is (571) 270-1136. The examiner can normally be reached on Monday-Friday from 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on (571) 272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SMT

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